

इंटरनेट

मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 13819 (1993): Artificial insemination guns [FAD 5: Livestock Feeds, Equipment and Systems]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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IS 13819 : 1993
(Reaffirmed 2004)

भारतीय मानक

कृत्रिम गर्भाधान गन — विशिष्ट

Indian Standard

**ARTIFICIAL INSEMINATION GUNS —
SPECIFICATION**

UDC 636.082.453.5

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

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Price Group 2

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Animal Reproduction Equipment and Systems Sectional Committee had been approved by the Food and Agriculture Division Council.

Artificial insemination using frozen semen technology for genetic improvement of livestock population at a faster rate is being practised in the country. The artificial insemination guns are being widely used to inseminate the breedable animals with frozen semen.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

ARTIFICIAL INSEMINATION GUNS — SPECIFICATION

1 SCOPE

This standard prescribes the material, dimensions and other requirements for artificial insemination guns for inseminating semen.

2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard:

IS No.	Title
1570 (Part 5) : 1985	Schedule of wrought steels: Part 5 Stainless and heat resisting steels (<i>second revision</i>)
7328 : 1974	High density polyethylene materials for moulding and extrusion
11800 : 1986	Artificial vagina for bovines

3 TERMINOLOGY

3.1 For the purpose of this standard, the following definitions shall apply.

3.1.1 Anterior End

The end of the gun which is carried inside the genital organ.

3.1.2 Posterior End

The thicker end carrying plunger for the insemination gun.

3.1.3 Barrel

The hollow tubular structure for easy passage of the plunger and also for providing support to the straw.

3.1.4 Lumen

The hollow tubular hole of the barrel for artificial insemination gun.

3.1.5 Plunger

It works as a piston for pushing the factory plug of straw forward during insemination.

3.1.6 Piston Type Plunger

The plunger which pushes the sealing ball of open end type straw during insemination.

3.1.7 Ring/Adopter

It tightens and holds the sheath over the insemination gun.

NOTE — The terms defined above are primarily related to guns for medium and mini types except 3.3 in which case the word ring is used for medium and mini types of guns and adopter for open end type of guns.

4 TYPES

The insemination guns shall be of the following types:

Type I	Medium
Type II	Mini
Type III	Open end

5 MATERIAL

The barrel and plunger of the insemination guns shall be made of stainless steel conforming to grade 04 Cr 19 Ni 9 of IS 1570 (Part 5) : 1985. The ring adopter shall be made of plastic (see IS 7328 : 1974) or teflon.

6 DIMENSIONS

The dimensions of the medium, mini and open end insemination guns shall be as given in Fig. 1 and Fig. 3 respectively. The inner diameter of the Type I and Type II guns shall be 2.6 mm and 1.6 mm respectively.

7 OTHER REQUIREMENTS

7.1 The posterior end of the barrel shall be in the form of a ring. The posterior end of the plunger shall be attached with a disc for better grip during insemination.

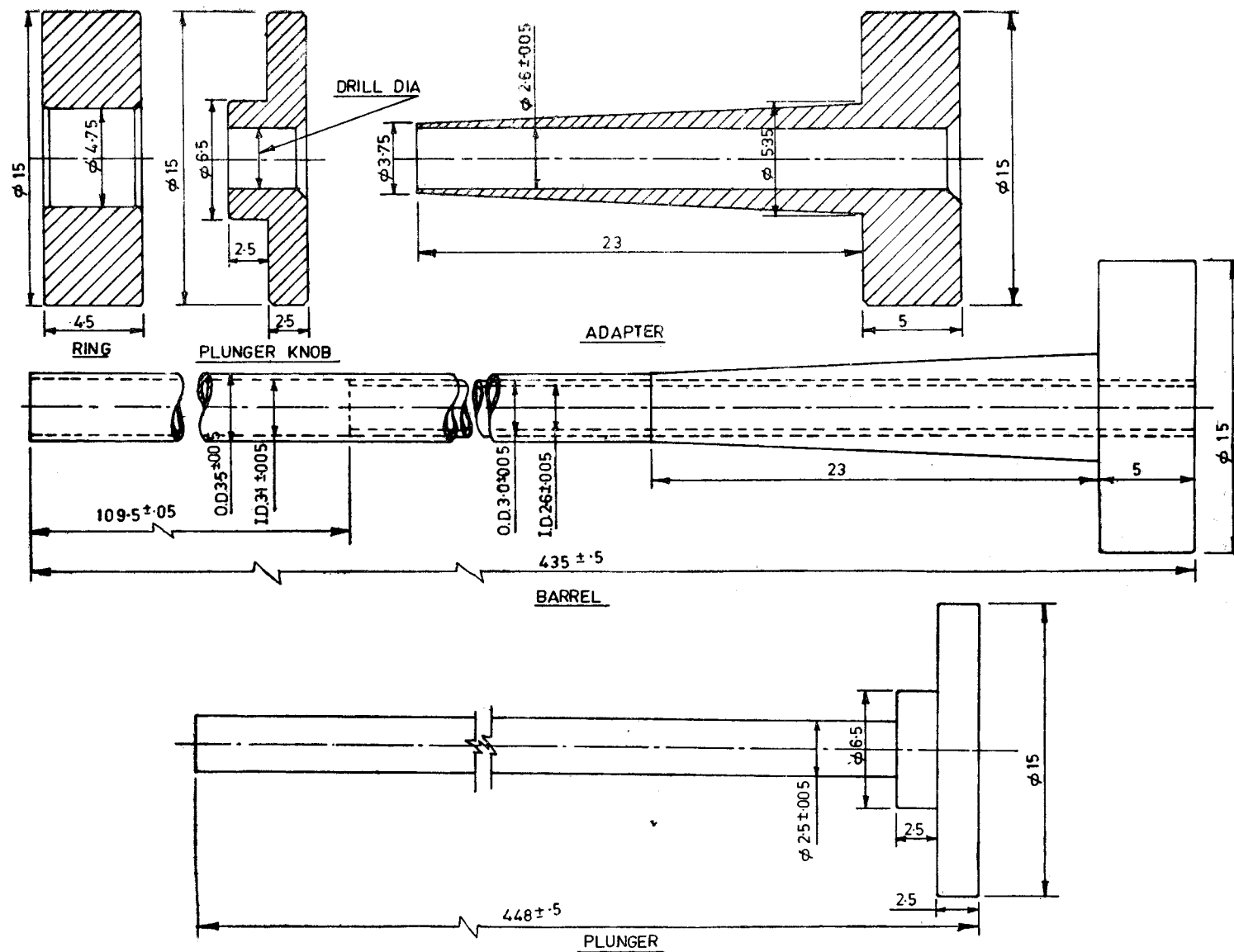
7.2 The plunger shall have the desired flexibility without changing its shape during operation.

7.3 Artificial insemination guns shall withstand temperature of 115°C for 30 minutes.

7.4 There shall not be any rust formation on the artificial insemination guns and shall be free from corrosion.

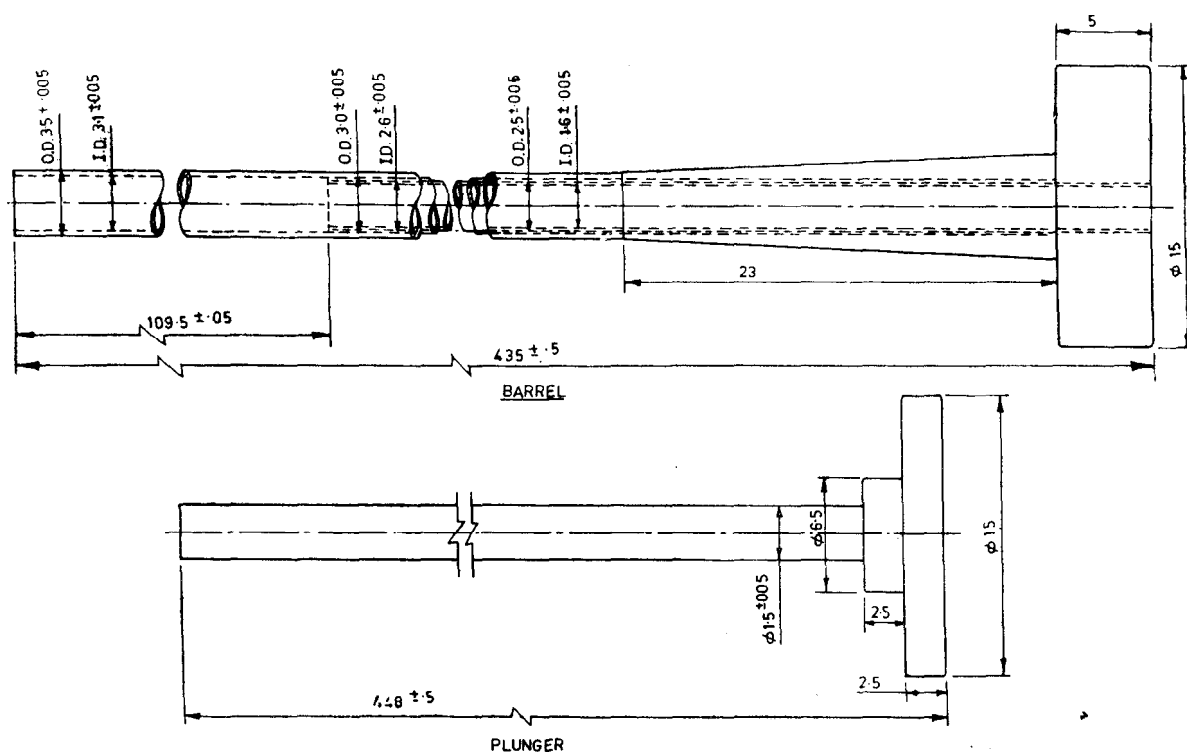
7.5 The assembly shall be such that the plunger is completely removable from the barrel.

7.6 The finish of the gun shall be smooth and free from surface defects such as pits and cuts visible to the naked eye.



All dimensions in millimetres.

FIG. 1 MEDIUM TYPE GUN



All dimensions in millimetres.

FIG. 2 MINI TYPE GUN

8 TESTS

8.1 Thermal Shock Test

The barrel and the plunger together with permanently attached fittings, if any, shall be kept at room temperature and suddenly plunged in boiling water for not less than 30 seconds, following which they shall be removed and rapidly immersed in water at 20°C . No fracture shall occur.

3.2 Corrosion Test

The removable parts shall be taken apart from the gun and the dismantled gun shall be subjected successively to the following treatments:

- Autoclaved in steam at 115°C for half an hour,
- Immersed in boiling distilled water for half an hour, and
- Immersed in boiling 0.9 percent saline solution in distilled water.

No part of the gun shall show signs of rusting after the above treatments. The gun shall function satisfactorily when re-assembled at room temperature.

9 PACKING

The artificial insemination guns shall be packed as agreed to between the purchaser and the supplier.

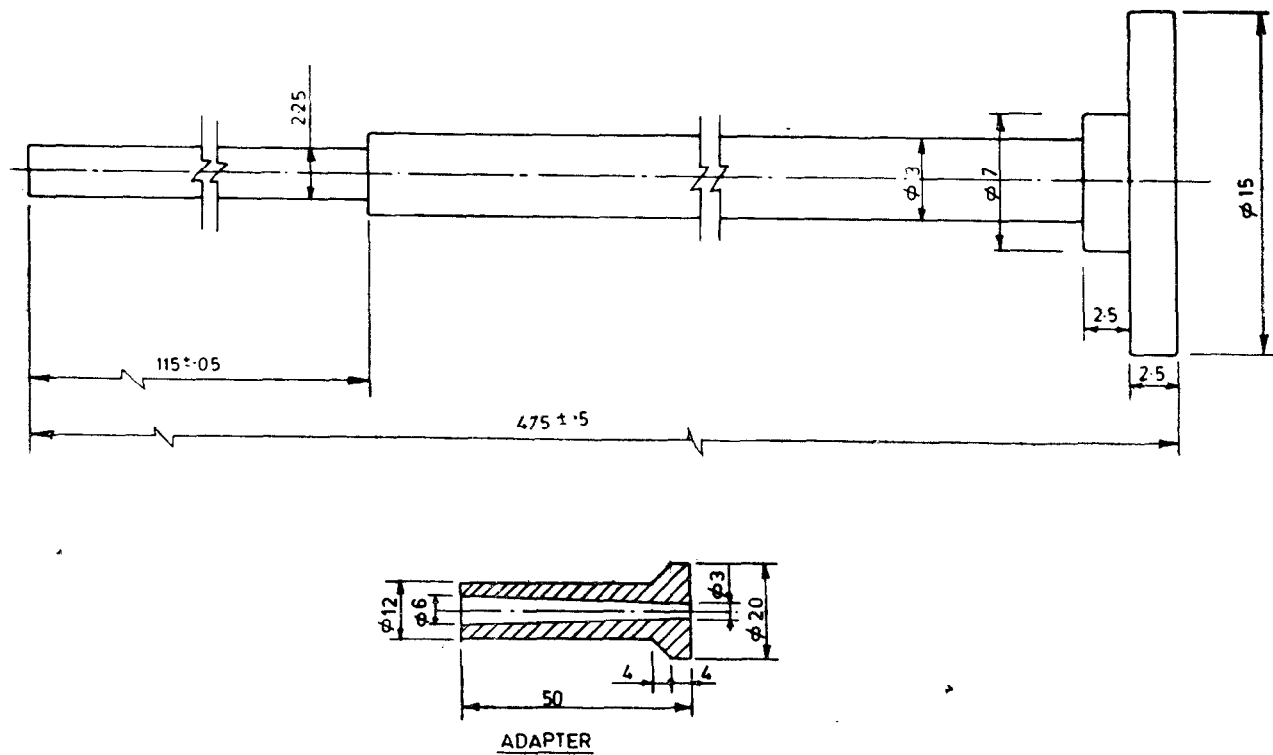
10 MARKING

Each pack of artificial insemination gun shall be marked legibly and indelibly with the following information:

- Name of the material,
- Indication of the source of manufacture,
- Type, and
- Batch or code number.

11 SAMPLING

For the purpose of ascertaining the conformity of the artificial insemination guns in a consignment to the requirements of this standard, the scale of sampling and criteria for conformity shall be as prescribed in Annex A of IS 11800 : 1986.



All dimensions in millimetres.

FIG. 3 OPEN END TYPE GUN

Standard Mark

The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.